

**Emerson Automation Solutions - Morin** Actuation Technologies 19200 Northwest Freeway Houston, Texas, USA Shell Global Solutions International B.V. Kesslerpark 1 2288 GS Rijswijk, The Netherlands

Subject: Emerson – Morin Acceptance of Endurance Testing

Date: 10 October 2017

Security Class: Unrestricted

Dear Emerson – Morin Test Team,

This is to confirm that the actuator product range described in this document has successfully passed the Endurance Test as described in EN 15714-3 (2009) including the Shell-specific pre- and post-inspections described in clause 9 of DEP 32.36.01.18 (2016).

Manufacturer name: Emerson Automation Solutions - Morin

Product: Emerson-Morin spring return Scotch Yoke Pneumatic Actuators, Models B and S series with Ductile Iron or Stainless Steel housing, with a Stainless Steel Cylinder, with Canted or Symmetric Yokes, suitable for -29°C to 99°C and having Maximum Operating Torques between 56 Nm up to 26.522 Nm.

Note: Both metric (M) and Imperial (U) bolting is covered by this certificate.

Reference manufacturer documents: MORTB0303-EN 2/16, endurance test procedures M0915-Shell Rev.5, TUV report P287 16 286 Rev. 0 and TUV report P287 17 053 Rev. 0. Independent witness involved in the tests: Mr. Allen Tinker, TUV Rheinland.

Any change to the design and specification or any change in material selection requires revalidation of this acceptance document.

This acceptance does not imply that the actuator is Shell P&T TAMAP approved.

The validity of this acceptance document expires 10 years after its publication date.

Willem G.S. van Rijs Senior Automation Engineer – SME Automated Valves PACO-EPAC

Certificate of Endurance Testing for Emerson – Morin Product Range